CLAIMS:

1. A synchronous TDD system for the transmission of speech and/or data between a master unit (FP) and at least two slave units (PP1, PP2) which are associated with the master unit (FP), the master unit (FP) including transmission means for transmitting a synchronization signal (beacon) in fixed time slots and the slave units (PP1, PP2) including respective receiving means for receiving and processing the synchronization signals transmitted by the master unit, the receiving means of the slave units (PP1, PP2) being configured in such a manner that in fixed time slots which are not used for a transmission of synchronization signals they are ready to receive or that in fixed time slots they are ready to receive with a setting which does not allow the reception of signals from the master unit (FP), the slave units (PP1, PP2) also including transmission means which are suitable to use one of the time slots in which the receiving means of the slave units (PP1, PP2) are ready to receive, but reception of signals from the master unit (FP) is not enabled, in order to transmit signals for initiating a communication between themselves.

2. A synchronous TDD system as claimed in claim 1, characterized in that the master unit (FP) is configured in such a manner that its transmission means transmit the synchronization signal at regular intervals (a) and regularly interrupt said regular transmission again, and that the receiving means of the slave units (PP1, PP2) are configured in such a manner that during this regular interruption they are ready to receive a signal for initiating a communication with another slave unit (PP1, PP2) of the same master unit (FP).

3. A synchronous TDD system as claimed in claim 1, characterized in that the slave units (PP) are configured in such a manner that at fixed intervals during a time slot which is used for the transmission of synchronization signals by the master unit (FP) they are ready to receive at a frequency other than the frequency used by the master unit (FP).

4. A synchronous TDD system as claimed in claim 1, characterized in that the transmission means of the master unit (FP) are configured in such a manner that they utilize an FHSS (Frequency Hopping Spread Spectrum) code for the transmission of the

synchronization and that the receiving means of the slave units (PP) are configured in such a manner that they normally receive with the same FHSS code, but in fixed time slots with a different FHSS code which can be used to initiate a communication with another slave unit (PP).

5. A synchronous TDD system as claimed in claim 1, characterized in that the transmission means of the master unit (FP) are configured in such a manner that they utilize a DSSS (Direct Sequence Spread Spectrum) code for the transmission of the synchronization signals and that the receiving means of the slave units (PP) are configured in such a manner that they normally receive with the same DSSS code, but in fixed time slots with a different DSSS code which can be used to initiate a communication with another slave unit (PP).

6. A synchronous TDD system as claimed in one of the preceding claims, characterized in that the transmission and receiving means of the slave units (PP1, PP2) are suitable to establish, after the initiation of the communication, between themselves a normal TDD connection with a frequency or with a code of an FHSS or a DSSS other than the frequency or code used by the master unit (FP) for the transmission of the synchronization signal.

7. A synchronous TDD system as claimed in one of the preceding claims, characterized in that the receiving means of the slave units (PP1, PP2) are suitable to continue the reception of synchronization signals from the master unit (FP) during a communication between two slave units (PP1, PP2) in time slots which are not required for this communication.

8. A synchronous TDD system as claimed in claim 1, characterized in that the system is a cordless communication system, notably a 902-928 MHz ISM band system, and that the master unit (FP) is a base station and the slave units (PP1, PP2) are handsets.

9. A method for a synchronous TDD system for the transmission of speech and/or data between a master unit (FP) and at least two slave units (PP1, PP2) which are associated with the master unit (FP), which method includes the following steps:

a) transmission of a synchronization signal (beacon) by the master unit (FP) in fixed time slots (1, 1+a), which synchronization signal is received by the slave units (PP1, PP2),

b) switching the slave units (PP1, PP2) so as to be ready to receive in fixed time slots (1+2a) in such a manner that it is impossible to receive signals from the master unit;

c) enabling the slave units (PP1, PP2) to transmit a signal during such a time slot (1+2a) in conformity with step b), which signal can be received by the other slave units (PP1, PP2) during the relevant time slot (1+2a);

d) enabling the slave units (PP1, PP2) to establish direct communication between themselves upon reception of a signal transmitted by a first slave unit (PP1, PP2) in conformity with step c) by a second slave unit (PP1, PP2) during a time slot (1+2a) in conformity with step b).